

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID: M-05294  
Date Received: 02/25/10  
Date Extracted: 02/26/10  
Date Analyzed: 02/26/10  
Matrix: Water  
Units: ug/L (ppb)

Client: Alaskan Copper Works  
Project: Metro Self Monitor, F&BI 002241  
Lab ID: 002241-01 x10  
Data File: 002241-01 x10.030  
Instrument: ICPMS1  
Operator: AP

|                    |             |              |              |
|--------------------|-------------|--------------|--------------|
| Internal Standard: | % Recovery: | Lower Limit: | Upper Limit: |
| Germanium          | 99          | 60           | 125          |

| Analyte: | Concentration<br>ug/L (ppb) |
|----------|-----------------------------|
| Chromium | 369                         |
| Nickel   | 369                         |
| Copper   | 448                         |
| Zinc     | 34.2                        |

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### Analysis For Total Metals By EPA Method 200.8

|                 |                |             |                                 |
|-----------------|----------------|-------------|---------------------------------|
| Client ID:      | Method Blank   | Client:     | Alaskan Copper Works            |
| Date Received:  | Not Applicable | Project:    | Metro Self Monitor, F&BI 002241 |
| Date Extracted: | 02/25/10       | Lab ID:     | I0-92 mb                        |
| Date Analyzed:  | 02/26/10       | Data File:  | I0-92 mb.017                    |
| Matrix:         | Water          | Instrument: | ICPMS1                          |
| Units:          | ug/L (ppb)     | Operator:   | AP                              |

| Internal Standard: | % Recovery: | Lower Limit: | Upper Limit: |
|--------------------|-------------|--------------|--------------|
| Germanium          | 96          | 60           | 125          |
| Indium             | 98          | 60           | 125          |
| Holmium            | 100         | 60           | 125          |

| Analyte: | Concentration<br>ug/L (ppb) |
|----------|-----------------------------|
| Chromium | <1                          |
| Nickel   | <1                          |
| Copper   | <1                          |
| Zinc     | <1                          |

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 03/04/10

Date Received: 02/25/10

Project: Metro Self Monitor, PO M-05294, F&BI 002241

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 002217-02 (Duplicate)

| Analyte  | Reporting Units | Sample Result | Duplicate Result | Relative Percent Difference | Acceptance Criteria |
|----------|-----------------|---------------|------------------|-----------------------------|---------------------|
| Chromium | ug/L (ppb)      | 1.24          | 2.40             | 64 a                        | 0-20                |
| Nickel   | ug/L (ppb)      | 8.17          | 8.37             | 2                           | 0-20                |
| Copper   | ug/L (ppb)      | 3.07          | 2.93             | 5                           | 0-20                |
| Zinc     | ug/L (ppb)      | 5.27          | 5.37             | 2                           | 0-20                |

Laboratory Code: 002217-02 (Matrix Spike)

| Analyte  | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Acceptance Criteria |
|----------|-----------------|-------------|---------------|---------------------|---------------------|
| Chromium | ug/L (ppb)      | 20          | 1.24          | 104                 | 67-132              |
| Nickel   | ug/L (ppb)      | 20          | 8.17          | 100 b               | 73-119              |
| Copper   | ug/L (ppb)      | 20          | 3.07          | 96                  | 50-144              |
| Zinc     | ug/L (ppb)      | 50          | 5.27          | 98                  | 46-148              |

Laboratory Code: Laboratory Control Sample

| Analyte  | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|----------|-----------------|-------------|----------------------|---------------------|
| Chromium | ug/L (ppb)      | 20          | 108                  | 66-135              |
| Nickel   | ug/L (ppb)      | 20          | 111                  | 67-134              |
| Copper   | ug/L (ppb)      | 20          | 105                  | 66-134              |
| Zinc     | ug/L (ppb)      | 50          | 106                  | 57-135              |

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## ENVIRONMENTAL CHEMISTS

### Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
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FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

March 4, 2010

 DUPLICATE

INVOICE #10ACU0303-1

Accounts Payable  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

RE: Project Metro Self Monitor, PO M-05294, F&BI 002241 - Results of testing  
requested by Gerry Thompson for material submitted on February 25, 2010.

1 sample analyzed for Total Chromium, Copper, Nickel and Zinc  
by Method 200.8 @ \$85 per sample \$ 85.00

Amount Due ..... \$ 85.00

FEDERAL TAX ID # (b) (6)



002241

## SAMPLE CHAIN OF CUSTODY

ME 2/25/10

AD4

Send Report To

Gerald Thompson

Company

ALASKA Copper Works

Address

628 S. Harvard St

City, State, ZIP

SEATTLE WA 98134

Phone #

206-571-6033

Fax #

206-382-4309

SAMPLES (signature)

PROJECT NAME/NO.

METRO SELF monitor

PO #

M-05294

REMARKS

Page # of

## TURNAROUND TIME

☐ Standard (2 Weeks)☒ RUSH

Rush charges authorized by:

## SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

| Sample ID | Lab ID | Date    | Time  | Sample Type      | # of containers | ANALYSES REQUESTED |              |               |              |               |     |    |    |    |    | Notes |
|-----------|--------|---------|-------|------------------|-----------------|--------------------|--------------|---------------|--------------|---------------|-----|----|----|----|----|-------|
|           |        |         |       |                  |                 | TPH-Diesel         | TPH-Gasoline | BTEX by 8021B | VOCs by 8260 | SVOCs by 8270 | HFS | OR | OR | OR | OR |       |
| M-05294   | 01     | 2/25/10 | 12:30 | H <sub>2</sub> O | 1               |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |
|           |        |         |       |                  |                 |                    |              |               |              |               |     |    |    |    |    |       |

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0000  
Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE

Relinquished by:

Received by:

Relinquished by:

Received by:

PRINT NAME

COMPANY

DATE

TIME

Gerald Thompson

Nhan Phan

ACW

FEBI

2/25/10

2/25/10

1:52pm

1:52am

Samples received at 19 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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March 4, 2010

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

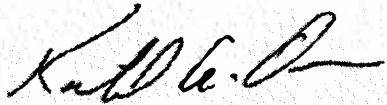
Dear Mr. Thompson:

Included are the results from the testing of material submitted on February 25, 2010 from the Metro Self Monitor, PO M-05294, F&BI 002241 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kortland Orr  
Project Manager

Enclosures  
ACU0303R.DOC